Correspondence

Overwhelming Postsplenectomy Infection

To THE EDITOR: In the article on overwhelming postsplenectomy infection in the October issue,[1] Dr Malcolm Brigden describes the fatal illness of a 36-year-old man who had gone to work at 6 AM with no symptoms, returned home at 1:30 PM with malaise and myalgia, and presented to an emergency department at 6:30 PM hypotensive (80/40 mm of mercury) and febrile (40°C) with ecchymoses and petechiae. At age 5 his spleen had been removed because of hereditary spherocytosis. "A tentative diagnosis of septic shock due to postsplenectomy infection was made. Vigorous treatment with hydration, large doses of penicillin, steroids, a dopamine infusion and blood component therapy was promptly instituted. Despite these therapeutic measures, the patient died three hours after hospital admission." All antemortem blood cultures subsequently showed *Streptococcus pneumoniae*.

We are not certain of the role of the spleen in protecting against overwhelming pneumococcal bacteremia, but the spleen's function as a phagocytic line filter has been known since the 19th century.[2(p126)] In the absence of the spleen, phagocytic function remains widely dispersed in other parts of the reticuloendothelial system. A special contribution of splenic phagocytosis, however, is implicit in the postsplenectomy cure of hereditary spherocytosis and immune thrombocytopenic purpura and in protection against fatal anemia in bartonellosis.

If an asplenic person is to survive pneumococcal bacteremia, the remnant phagocytic capability of the reticuloendothelial system should not be compromised. It is well known that phagocytes are inhibited by high-dose corticosteroid therapy.[3(p1875)] The administration of "large doses" of steroids may injure asplenic patients who have overwhelming postsplenectomy infection.

WILLIAM H. CROSBY, MD
Chief of Hematology
Chapman Cancer Center
3201 McClelland Blvd
Joplin, MO 64804

REFERENCES

1. Brigden ML: Overwhelming postsplenectomy infection—Still a problem. West J Med 1992 Oct; 157:440-443

2. Crosby WH: The spleen, *In* Wintrobe MM (Ed): Blood Pure and Eloquent. New York, NY, McGraw Hill, 1980

3. Wintrobe MM: Clinical Hematology, 8th Ed. Philadelphia, Pa, Lea & Febiger, 1981

* * *

Dr Brigden Responds

To THE EDITOR: Dr Crosby's comments regarding possible harmful effects of steroid therapy in the treatment of overwhelming postsplenectomy infection deserve careful consideration. Several recent controlled studies have questioned the efficacy and safety of steroids in treating septic shock.[1-3] In at least one review it was concluded that there is no indication for high-dose steroids in the management of this condition.[4] This position has not been universally accepted, however. For instance, a recent summary of the accumulated data indicated that high-dose corticosteroids given as one single dose during the initial hours of gram-negative septic shock more likely than not extended a beneficial effect on mortality.[5] As Dr Crosby points out, patients with overwhelming postsplenectomy infection should theoretically be more sensitive to the adverse effects of steroid therapy on phagocytic function. On the other hand, most of these patients at autopsy have shown bilateral adrenal necrosis characteristic of the Waterhouse-Friderichsen syndrome. Perhaps the correct approach lies with individualized therapy incorporating particular attention to steroid therapy later as clinically indicated.[6,7]

MALCOLM L. BRIGDEN, MD, FRCPC
Island Medical Laboratories, Ltd
204 - 1121 Yates St
Victoria, BC V8V 3N1
Canada

REFERENCES

1. Sprung CL, Caralis PV, Marcial EH, et al: The effects of high-dose corticosteroids in patients with septic shock—A prospective, controlled study. N Engl J Med 1984; 311:1137-1143

2. Hinshaw LB, Peduzzi P, Young E, et al: Effect of high-dose glucocorticoid therapy on mortality in patients with clinical signs of systemic sepsis. N Engl J Med 1987; 317:659-665

3. Bone RC, Fisher CJ Jr, Clemmer TP, Slotman GJ, Metz CA, Balk RA: A controlled clinical trial of high-dose methylprednisolone in the treatment of severe sepsis and septic shock. N Engl J Med 1987; 317:653-658

4. Cohen J, Glauser MP: Septic shock: Treatment. Lancet 1991; 338(8769):736-739

5. Sjölin J: High-dose corticosteroid therapy in human septic shock: Has the jury reached a correct verdict? Cir Shock 1991; 35:139-151

6. Schneider AJ, Voerman HJ: Abrupt hemodynamic improvement in late septic shock with physiological doses of glucocorticoids (Letter). Intensive Care Med 1991; 17:436-437

7. Briegel J, Forst H, Kellermann W, Haller M, Peter K: Haemodynamic improvement in refractory septic shock with cortisol replacement therapy (Letter). Intensive Care Med 1992; 18:318

* * *

To THE EDITOR: I enjoyed the editorial by Dr Styrt[1] that accompanied my article on overwhelming postsplenectomy infection.[2] I would like to amplify her commentary in two areas: the potential value of the detection of Howell-Jolly bodies in identifying hyposplenic or functionally hyposplenic persons and the usefulness of antipneumococcal vaccination in these patients.

Dr Styrt pointed out that Howell-Jolly bodies are not pathognomonic for hyposplenism and that in certain conditions such as sprue, their presence is not always correlated to the severity of the illness. While it is true that they are not pathognomonic for hyposplenism, the cause of other hematologic conditions with which they may be associated will usually be readily apparent from other changes in the hematologic picture. Detecting persistent unexplained Howell-Jolly bodies on the peripheral blood film is an excellent marker of a degree of hyposplenism sufficient to be a risk factor for overwhelming postsplenectomy infection.[3] Persistent unexplained Howell-Jolly bodies on peripheral blood film may be investigated by algorithm (Figure 1).

If workup of a patient with Howell-Jolly bodies ultimately reveals a condition such as celiac disease, systemic lupus, or inflammatory bowel disease where hyposplenism may be transient or reversible with therapy, only counseling coupled with follow-up may be appropriate. There exist at least 11 well-documented cases of fulminant sepsis in functionally hyposplenic persons, however.[4] These patients' septicemia occurred in association with a wide variety of clinical disorders including ulcerative colitis, systemic lupus, Still's disease, sarcoidosis, following splenic irradiation, and after the administration of Thorotrast [a colloidal preparation of thorium dioxide].[4] I suspect that there have been many additional deaths in patients with hyposplenism that simply have never been reported in the literature. Despite the fact that

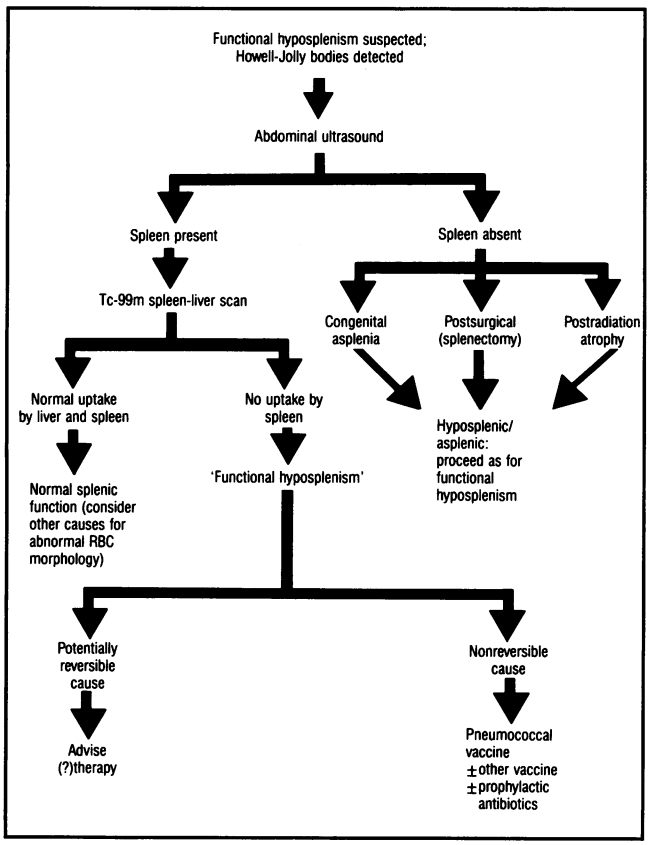

Figure 1.—A course of investigation is shown after persistent unexplained Howell-Jolly bodies are detected. RBC = red blood cell, Tc-99m = technetium 99m

there have been no specific vaccine trials in these patients, most authorities recommend that when persons with functional hyposplenism are identified, they receive antipneumococcal prophylaxis; the vaccine is both inexpensive and well tolerated.[4,5]

Patients who persistently show Howell-Jolly bodies on a peripheral blood film should always be observed to rule out functional hyposplenism. When the hyposplenism is nonreversible, they should receive the pneumococcal vaccine and other appropriate follow-up measures.

MALCOLM L. BRIGDEN, MD, FRCPC
Island Medical Laboratories, Ltd
204 - 1121 Yates St
Victoria, BC V8V 3N1
Canada

REFERENCES

1. Styrt B: Complications of asplenia and hyposplenism—Persistent uncertainties. West J Med 1992 Oct; 157:461-463
2. Brigden ML: Overwhelming postsplenectomy infection—Still a problem. West J Med 1992 Oct; 157:440-443
3. Corazza GR, Ginaldi L, Zoli G, et al: Howell-Jolly body counting as a measure of splenic function—A reassessment. Clin Lab Haematol 1990; 12:269-275
4. Doll DC, List AF, Yarbro JW: Functional hyposplenism. South Med J 1987; 80:999-1006
5. Schwartz JS: Immunization Practices Advisory Committee: Pneumococcal polysaccharide vaccine. MMWR 1989; 38:64-76

* * *

Dr Styrt Responds

To THE EDITOR: Information on specific data supporting steps in Dr Brigden's proposed flow chart would, I am sure, be of great assistance in the counseling of specific patients because one of the problems in clinical management is the difficulty of making predictions in a particular patient. For example, the article by Corazza and co-workers does not give any information on the actual incidence of infection,[1] and individual case reports do not provide a relative risk estimate, especially when compared with sporadic cases of overwhelming pneumococcal sepsis in persons without any known risk of hyposplenism.[2] The updated 1991 Centers for Disease Control recommendations did, as cited in my editorial, suggest both meningococcal and pneumococcal vaccine (plus possible consideration of *Haemophilus influenzae* vaccine) for adults "with splenic dysfunction or anatomic asplenia."[3] It would be interesting to know whether the potentially narrower use recommended in Dr Brigden's guidelines might result from any unanticipated differences in recommendations between countries. Because studies of pneumococcal vaccine in "high risk" populations have produced highly variable estimates of efficacy or lack thereof,[4-8] it is particularly important that using this vaccine should not induce a false sense of security leading to delayed treatment of patients known to be asplenic or hyposplenic with febrile illnesses that could represent early sepsis. Perhaps projected efforts to develop more effective pneumococcal vaccines for young children[9] might also offer new benefits for adults with hyposplenism.

BARBARA STYRT, MD
Associate Professor of Medicine, Microbiology, and Public Health
Division of Infectious Diseases
Rm B320 Life Sciences
Michigan State University
East Lansing, MI 48824-1317

REFERENCES

1. Corazza GR, Ginaldi L, Zoli G, et al: Howell-Jolly body counting as a measure of splenic function—A reassessment. Clin Lab Haematol 1990; 12:269-275
2. Bramley PN, Shah P, Williams DJ, Losowski MS: Pneumococcal Waterhouse-Friderichsen syndrome despite a normal spleen. Postgrad Med J 1989; 65:687-688
3. Centers for Disease Control: Update on adult immunization—Recommendations of the Immunization Practices Advisory Committee (ACIP). MMWR 1991; 40(RR-12):1-94
4. John AB, Ramial A, Jackson H, Maude GH, Sharma AW, Serjeant GR: Prevention of pneumococcal infection in children with homozygous sickle cell disease. Br Med J 1984; 288:1567-1570
5. Ammann AJ, Addiego J, Wara DW, Lubin B, Smith WB, Mentzer WC: Polyvalent pneumococcal-polysaccharide immunization of patients with sickle-cell anemia and patients with splenectomy. N Engl J Med 1977; 297:897-900
6. Shapiro ED, Clemens JD: A controlled evaluation of the protective efficacy of pneumococcal vaccine for patients at high risk of serious pneumococcal infections. Ann Intern Med 1984; 101:325-330
7. Broome CV, Facklam RR, Fraser DW: Pneumococcal disease after pneumococcal vaccination: An alternative method to estimate the efficacy of pneumococcal vaccine. N Engl J Med 1980; 303:549-552
8. Simberkoff MS, Cross AP, Al-Ibrahim M, et al: Efficacy of pneumococcal vaccine in high-risk patients—Results of a Veterans Administration Cooperative Study. N Engl J Med 1986; 315:1318-1327
9. Baltimore RS: New challenges in the development of a conjugate pneumococcal vaccine (Editorial). JAMA 1992; 268:3366-3367

Peer Review and 'Beasom's Principle'

To THE EDITOR: In their article, "Simultaneous Reconstruction of the Abdominal Aorta and Cholecystectomy—A Peer Review Perspective,"[1] Drs Heydorn and Moncrief observe, ". . . unfortunately some physicians are not receptive to constructive criticism from their peers."

Physicians are socialized during training to believe they must always make the right decisions for their patients and convey those decisions with an air of authority and certainty that will instill confidence in the patient, the staff, and, not least, the physician. As a result it is difficult for many physicians to admit to themselves that they have erred and nearly impossible to admit the same to others. Add to this the fact that it is unclear whether California Medical Review, Inc, reviews are protected from use by plaintiffs in lawsuits, and it is understandable and predictable that physicians are unwilling to admit clinical errors.